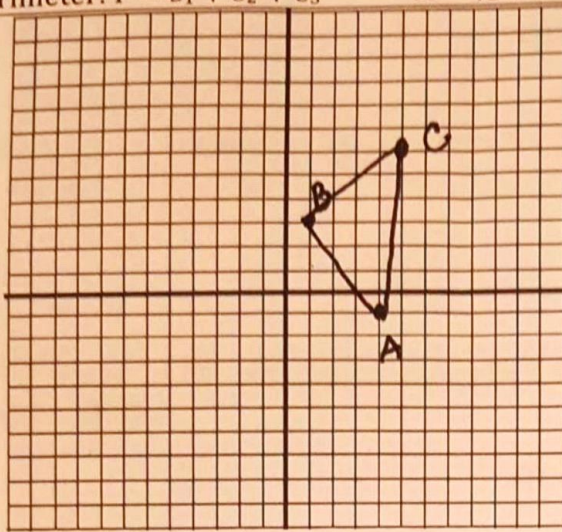


1. Plot triangle ABC with the following vertices: A(4, -1), B(1, 3), C(5, 6).

Perimeter: $P = s_1 + s_2 + s_3$ $A = \frac{1}{2} bh$



a. Find the perimeter of the given triangle.

$$5 + 5 + \sqrt{50}$$

$$5 + 5 + 5\sqrt{2}$$

$$10 + 5\sqrt{2}$$

$$\approx 17.1$$

b. Find the area of the given triangle.

$$A = \left(\frac{1}{2}\right)(5)(5)$$

$$\approx 12.5$$

$$AB = \sqrt{(1 - 4)^2 + (3 - (-1))^2}$$

$$= \sqrt{(-3)^2 + (4)^2}$$

$$= \sqrt{(9) + (16)} = \sqrt{25} = 5$$

$$BC = \sqrt{(5 - 1)^2 + (6 - 3)^2}$$

$$= \sqrt{(4)^2 + (3)^2}$$

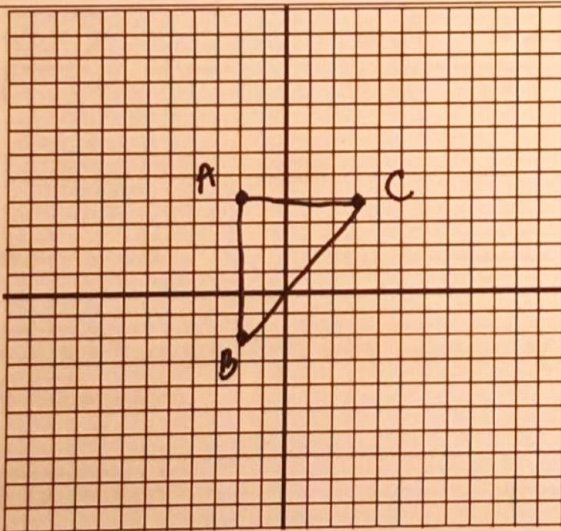
$$= \sqrt{(16) + (9)} = \sqrt{25} = 5$$

$$AC = \sqrt{(5 - 4)^2 + (6 - (-1))^2}$$

$$= \sqrt{(1)^2 + (7)^2}$$

$$= \sqrt{(1) + (49)} = \sqrt{50} \approx 5\sqrt{2} \approx 7.1$$

2. Plot triangle ABC with the following vertices: A(-2, 4), B(-2, -2), C(3, 4)



a. Find the perimeter of the given triangle.

$$6 + 5 + \sqrt{61} = 11 + \sqrt{61}$$

$$\approx 18.8$$

b. Find the area of the given triangle.

$$A = \frac{1}{2}(6)(5)$$

$$= 15$$

$$AB = \sqrt{(-2 - (-2))^2 + (-2 - 4)^2}$$

$$= \sqrt{(0)^2 + (-6)^2}$$

$$= \sqrt{(0) + (36)} = \sqrt{36} = 6$$

$$BC = \sqrt{(3 - (-2))^2 + (4 - (-2))^2}$$

$$= \sqrt{(5)^2 + (6)^2}$$

$$= \sqrt{(25) + (36)} = \sqrt{61} = 7.8$$

$$AC = \sqrt{(3 - (-2))^2 + (4 - 4)^2}$$

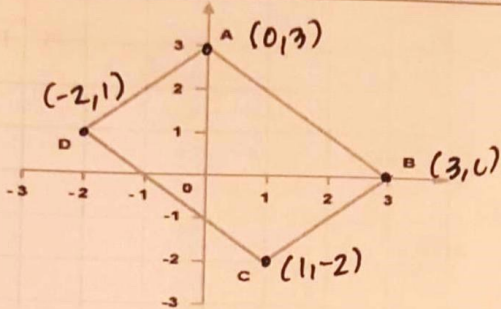
$$= \sqrt{(5)^2 + (0)^2}$$

$$= \sqrt{(25) + (0)} = \sqrt{25} = 5$$

Rectangles Perimeter: $P = 2L + 2W$

Area: $A = bh$

3.



$$AD = \sqrt{(-2-0)^2 + (1-3)^2} = \sqrt{(-2)^2 + (-2)^2} = \sqrt{4+4} = \sqrt{8} = 2\sqrt{2} \approx 2.8$$

$$AB = \sqrt{(3-0)^2 + (0-3)^2} = \sqrt{(3)^2 + (-3)^2} = \sqrt{9+9} = \sqrt{18} = 3\sqrt{2} \approx 4.2$$

Perimeter =

$$2\sqrt{2} + 2\sqrt{2} + 3\sqrt{2} + 3\sqrt{2}$$

$$10\sqrt{2}$$

$$14.1$$

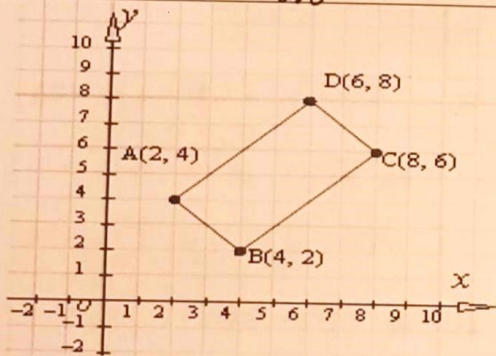
Area =

$$A = (2\sqrt{2})(3\sqrt{2})$$

$$(6\sqrt{4}) = 6(2)$$

$$= 12$$

4.



$$AD = \sqrt{(2-6)^2 + (4-8)^2} = \sqrt{(-4)^2 + (-4)^2} = \sqrt{16+16} = \sqrt{32} = 4\sqrt{2} \approx 5.7$$

$$AB = \sqrt{(4-2)^2 + (2-4)^2} = \sqrt{(2)^2 + (-2)^2} = \sqrt{4+4} = \sqrt{8} = 2\sqrt{2}$$

Perimeter =

$$4\sqrt{2} + 4\sqrt{2} + 2\sqrt{2} + 2\sqrt{2}$$

$$12\sqrt{2} \approx 16.97 \approx 17$$

Area =

$$A = (4\sqrt{2})(2\sqrt{2})$$

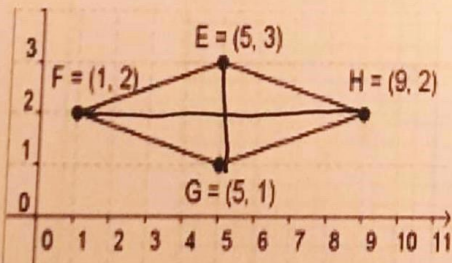
$$= (8\sqrt{4}) = 8(2)$$

$$= 16$$

Rhombus: Perimeter: $P = 4s$

Area = $\frac{1}{2}d_1d_2$

5.



$$EF = \sqrt{(5-1)^2 + (3-2)^2} = \sqrt{(4)^2 + (1)^2} = \sqrt{16+1} = \sqrt{17} \approx 4.1$$

Perimeter =

$$4\sqrt{17}$$

$$\approx 16.6$$

Area =

$$\frac{1}{2}(8)(2)$$

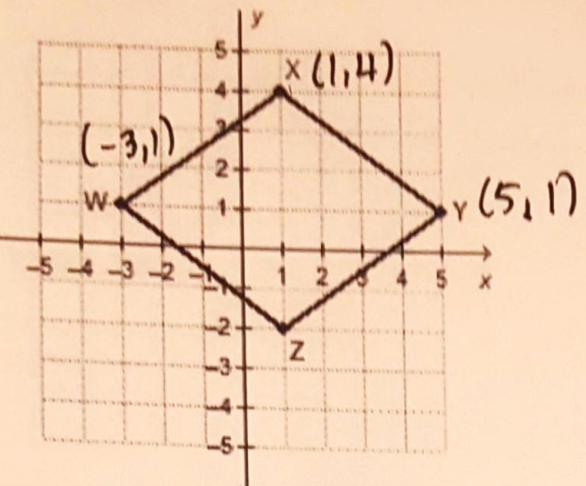
$$4$$

Perimeter =

$$(5)(4) = 20$$

Area =

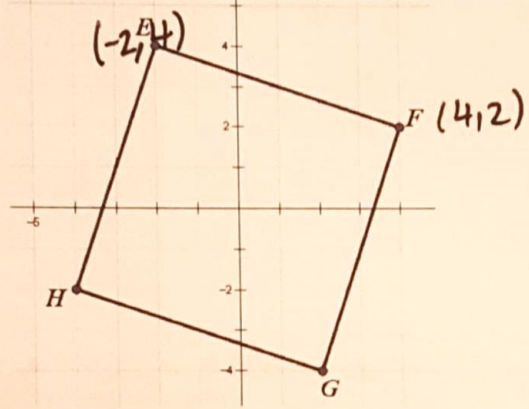
$$A = \left(\frac{1}{2}\right)(8)(6) = 24$$



$$\begin{aligned} WX &= \sqrt{(-3-1)^2 + (1-4)^2} \\ &= \sqrt{(-4)^2 + (-3)^2} \\ &= \sqrt{(16) + (9)} = \sqrt{25} = 5 \end{aligned}$$

Squares: Perimeter: $P = 4s$ Area = s^2

8.



$$\begin{aligned} EF &= \sqrt{(4-(-2))^2 + (2-4)^2} \\ &= \sqrt{(6)^2 + (-2)^2} \\ &= \sqrt{(36) + (4)} = \sqrt{40} = 2\sqrt{10} \approx 6.3 \end{aligned}$$

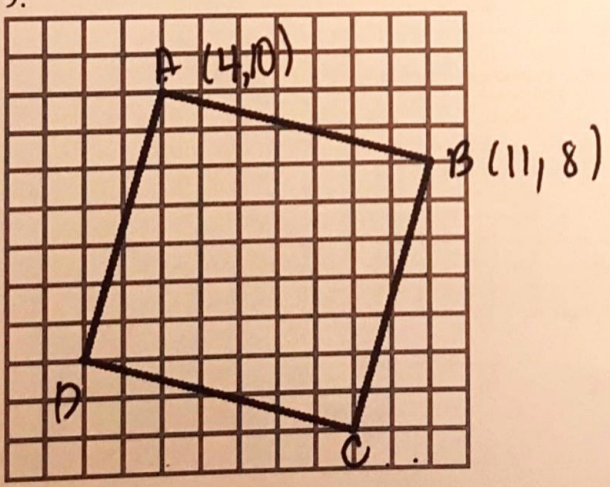
Perimeter =

$$\begin{aligned} 4(2\sqrt{10}) &= 8\sqrt{10} \\ 4(6.3) &\approx 25.2 \end{aligned}$$

Area =

$$\begin{aligned} (2\sqrt{10})^2 & \\ (4\sqrt{100}) & \\ (4(10)) &= 40 \end{aligned}$$

9.



$$\begin{aligned} AB &= \sqrt{(11-4)^2 + (8-10)^2} \\ &= \sqrt{(7)^2 + (-2)^2} \\ &= \sqrt{(49) + (4)} = \sqrt{53} \approx 7.3 \end{aligned}$$

Perimeter =

$$\begin{aligned} 4(\sqrt{53}) &= 4\sqrt{53} \\ &\approx 29.2 \end{aligned}$$

Area =

$$(\sqrt{53})^2 = 53$$